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ABSTRACT

To determine whether preservice teachers could articulate, in writing, appropriate instructional strategies for teaching phonics, a study surveyed 83 elementary education students selected randomly from all students enrolled in a reading methods course at Brigham Young University. Students completed one of three questionnaires assessing what strategies students would use to teach the letter sounds, blending techniques, and phonic generalizations to first grade children. The questionnaires included both open-ended and closed format questions. Results showed that most of the students could not articulate appropriate instructional strategies for either the implicit or explicit approach to phonics instruction for first grade children. Results also indicated that respondents had not reviewed the literature pertaining to the teaching of phonics. In addition, none of the students listed an instructional strategy that met the standards for an appropriate instructional session, such as explanation of goals and objectives, learner practice, and feedback. (Five tables of data are included.) (MM)

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An Assessment of Preservice Teachers' Knowledge of Instructional Strategies for Teaching Phonics

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Currently most educators in the United States would agree that phonics instruction (instruction which gives children the power to break the language code) is a critical component of effective reading instruction (Anderson, Hiebert, Scott, & Wilkinson, 1985). Chall's (1983) research was influential in helping educators to understand the importance of phonics instruction. Much of the research literature advocates using phonics. For example, recently the U.S. Secretary of Education issued a report in which he summarized the research literature concerning what works in teaching and learning (Bennett, 1986). In the report, Bennett stated that children get a better start in reading if they are taught phonics.

If phonics is a critical component in effective reading instruction, it follows that preservice teachers should learn instructional strategies for teaching phonics. Are those preservice teachers learning instructional strategies for teaching phonics? That question deserves serious attention.

Effective phonics instruction includes the ability to teach letter sounds associations, blending procedures, and phonic generalizations. Even though prospective teachers may be committed to teaching phonics, they may not have knowledge or the ability to teach these important skills to beginning readers. The college of education at Brigham Young University (BYU) is concerned about the knowledge and competence of its teachers and has supported this evaluation.

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Purpose of the Study

The purpose of the present study was to determine whether preservice teachers at Brigham Young University could articulate in writing appropriate instructional strategies for teaching phonics. In the present study, we made the assumption that if a student has knowledge of an appropriate method and can articulate that knowledge on paper, there is a high degree of probability the student will be able to implement these strategies in the classroom.

What is meant by appropriate instructional strategies? Shulman (1986) states that prospective teachers should be taught methods appropriate for the particular content they are teaching. He feels that a major concern in teacher preparation programs throughout the nation is that subject matter content is taught separately from teaching methods. This divorce between methods and content has the potential to cause confusion and ineptitude in students. Shulman further recommends that prospective teachers should be taught appropriate methods for teaching different subjects. For example, teaching math requires the use of different methods than reading instruction.

Significance of the Study

The results of this evaluation have significant importance not only to the BYU College of Education Administrators, but to others responsible for teacher preparation. If the results from this and future studies indicate that prospective teachers are not learning appropriate instructional strategies for teaching phonics, children in the public schools may not be receiving the instruction they need to learn critical phonics skills so necessary to their reading success.

METHODS

Sample

The random sample consisted of 83 elementary education students at Brigham Young University. The students in the sample were asked to fill out one of three questionnaires. All of these students were enrolled in the course Elementary Education (El. Ed.) 370: Practicum in

Reading, Math, Social Studies and Science. Students who finished this course completed the reading requirements for certification. All of the students selected for the sample responded to the questionnaire.

Instrument

Three questionnaires were developed to assess what teaching strategies students would use to teach the letter sounds, blending techniques, and phonic generalizations to first grade children. The questionnaires included both open-ended and closed format questions. The instrument went through many revisions until it was at a point of clarity sufficient to be administered. The instrument was designed to allow students to list in detail the teaching strategies they would use to teach the elements of phonics to first grade children.

Even though most educators agree that some degree of phonics instruction is important, they disagree concerning how, when and how much phonics to teach children . The many different philosophies for teaching phonics can be synthesized into two major approaches - explicit and implicit (Anderson et al., 1985; Leu & Kinzer, 1987). In explicit phonics instruction (also called synthetic), the sounds associated with letters are identified in isolation and then blended together to form words. This approach generally uses a direct method of teaching (Johnson & Baumann, 1984; May, 1986). In implicit phonics (also called analytic), the sound association with a letter is not to be pronounced in isolation thus the teaching of blending is not feasible. Instead, the teacher teaches the letter sounds to the children only in the context of words. This approach generally uses an inquiry or discovery method of teaching (Mckee, 1966; Dunn, Kowallis, & Stewart, 1983).

Study parameters

This study was not intended to broach or solve the debate concerning which general approach to phonics instruction (explicit vs. implicit) is best, rather, it was designed to find out if students could write appropriate instructional strategies for the approach they were taught during their teacher preparation courses. Since the explicit and implicit approaches are generally accepted as two major ways for teaching phonics, the questionnaire asked the students to list appropriate

teaching strategies (a complete and detailed lesson plan) reflecting the approach they were taught in their teacher preparation courses.

Establishment of criteria

The most difficult task of this study was establishing the criteria or standards which defined appropriate teaching methods for explicit and implicit phonics instruction. In conducting this evaluation, we followed the guiding principles of Standards for Education Evaluation (1981). We identified the audiences of the evaluation and asked them what they considered to be appropriate criteria for teaching phonics using either an explicit or implicit approach.

We received many different sets of criteria from each audience. We expected that there would be some diversification of standards because the issue of what and how to teach phonics is a very controversial topic among reading educators. The most diverse criteria came from the Elementary Education professors who specialized in reading instruction. We also found the criteria established in the literature was also varied without conformity. In summary, there was no general agreement among the audiences concerning what criteria to use for the evaluation.

Normally an evaluation addresses multiple criteria in making value judgements about the evaluand (the object being evaluated). Because the criteria we receive were so diverse, it was impossible to judge the merit or worth of the students' responses according to multiple criteria. We noticed as we reviewed the different sets of criteria that some methods were mentioned more frequently than others. Since the Elementary Education Department Chairman at BYU was the principal stakeholder in the evaluation, he determined the final criteria which was used for the two methods of phonics instruction. We recognize the possibility that some people will not agree with the criteria we established for this evaluation.

Gagne & Briggs (1979) and Rosenshine & Stevens (1986) suggested that an appropriate instructional strategy for teaching a memory task such as phonics in an explicit approach (synthetic or direct), should include the following steps:

1) explain the goals of the instructional session and make sure they understand those goals

2) demonstrate or model the performance you want the children to learn,

3) provide frequent opportunities to practice what they have learned,

4) provide feedback to the children concerning their performance, and

5) check to make sure the children are understanding and achieving the instructional objectives (assess mastery).

Dunn et al. (1983) stated that when teachers use an implicit approach, they should include the following activities in their lesson plan:

1) provide illustrative examples of the letter sound in the context of four or five different words,

2) direct the students' inquiry by causing them to focus on the task to be generalized,

3) allow students to formulate a generalization explaining the pattern in the examples,

4) help the students clarify their generalization by verifying their hypothesis with illustrative examples to see if their generalization holds true,

5) provide frequent opportunities to practice what they have learned, and

6) evaluate students' mastery of the generalization.

Procedures

The three questionnaires were administered to the students in each of the El. Ed. 370 courses on the last day of class. Before the students were given the questionnaire, a cover letter was distributed explaining the purpose of the survey, the need and importance of responding, a description of the questionnaire, an endorsement for the study, and an expression of appreciation for their support. The students were assured that their anonymity would be preserved. Students were given as much time as they needed to complete the questionaire. The range of time for completion was from 15 to 30 minutes.

RESULTS

The results of the data analysis will be categorized according to the information collected for each questionnaire The questionnaires focused on three elements of phonics: letter sounds, blending and phonic generalizations.

Letter Sounds

Of the 26 students surveyed relative to the teaching of letter sounds, 35 percent reported they had been taught both the explicit and implicit methods, 42 percent reported they had been taught only the implicit approach, 12 percent reported they had been taught only the explicit approach, and 12 percent reported they had not been taught either approach.

The responses of the 12 students that listed their teaching strategies for the explicit approach were judged according to the frequency they addressed the established criteria. As we mentioned previously, Gagne & Briggs (1979) and Rosenshine & Stevens (1986) suggests that an effective instructional strategy for teaching a discrimination skill such as associating a letter sound with the letter in an explicit approach (systematic and direct) should include the following instructional strategies: 1) explain the goals of the instructional session and make sure they understand those goals (state objectives), 2) demonstrate or model the performance you want the children to learn, 3) provide frequent opportunities to practice what they have learned, 4) provide feedback to the children concerning their performance, and 5) check to make sure the children are understanding and achieving the instructional objectives (assess mastery).

The following table summarizes the number of students and corresponding percentage who mentioned the criteria in their teaching strategies for explicitly teaching letter sounds.

Table 1

Students Who Addressed the Criteria in Their Responses for Explicitly Teaching Letter Sounds

Criteria Components	No.	%
1. Explain Objectives	6	50
2. Model the Letter Sound	7	58
3. Provide Practice	6	50
4. Provide Feedback	0	0
5. Assess Mastery	0	0

The responses of the 20 students who reported they had been taught the implicit approach were analyzed and summarized by frequency of how many of the students addressed the criteria. As was mentioned in the METHODS section, Dunn et al. (1983) states that when teachers use the implicit approach, they should include the following activities in their lesson plan: 1) provide illustrative examples of the letter sound in the context of four or five different words, 2) direct the students' inquiry by causing them to focus on the task to be generalize, 3) allow students to formulate a generalization explaining the pattern in the examples, 4) help the students clarify their generalization by verifying their hypothesis with illustrative examples to see if their generalization holds true, 5) provide frequent opportunities to practice what they have learned, and 6) evaluate students' mastery of the generalization.

The following table summarizes the number of students and corresponding percentage who mentioned the criteria in their teaching strategies for implicitly teaching letter sounds.

Table 2

Students Who Addressed the Criteria in Their Responses for Implicitly Teaching Letter Sounds

Criteria Components	No.	%
1. Illustrative Examples	15	75
2. Direct Students' Inquiry	5	25
3. Allow to Formulate Hypotheses	2	10
4. Clarify Generalizations	0	0
5. Provide Practice	5	25
6. Assess Mastery	0	0

Rosenshine and Stevens (1986) suggests that the teacher should perform the following activities during any instructional session: 1) explain the objectives or goals of instructional session, 2) teach the students what you want them to learn, 3) allow learners to practice the skill, and 4) provide individual feedback to the learners. Each of the students' teaching methods were analyzed to determine if the student addressed all four criteria activities necessary in an instructional session. None of the students addressed all four of the activities listed by Rosenshine and Stevens in their answers to the questionaire.

Teachers should also be aware of a short term memory capacity for children as they are teaching letter sounds. Miller (1956) suggested the short term memory can process between seven plus or minus two items at once. Simon (1981) is more conservative in suggesting that people can only hold about four chunks (or items) at time in short term memory. Based on the findings of the previous research, the criteria for first grade children, then, should be between three to seven letter

sounds introduced in an instructional session. Students were asked on the questionnaire how many letter sounds they would introduce at a time in a instructional session. Fifteen of the 26 students (58 percent) said they would teach between three to seven letters in an instructional session.

Another aspect of the questionnaire was designed to find out if students had an appropriate understanding of how long to focus on a particular set of letter sounds. Using the same process to determine the criteria for this question as we did for the previous criteria (summarizing the literature and consulting with the Elementary Education Department Chairman), about four days is an appropriate time to focus on teaching a particular set of letter sounds. Seventeen of the 26 students (63 percent) indicated they would spend about four days teaching the set of letter sounds.

The Dean of the College of Education at BYU asked specifically about the acquaintance of the students with the research literature on the teaching of phonics Three of the 26 students (12 percent) indicated that they had reviewed the research literature.

Blending Techniques

Twenty nine students were questioned about the strategy they had been taught in their elementary education reading classes for teaching blending. Seventeen (58%) indicated they had been taught to teach blending using an explicit approach. Because the task of blending requires that the letter sounds be learned in isolation and then blended together into a recognizable word the process is functionally taught only explicitly. Therefore those who indicated they would teach blending implicitly in a real sense did not have a workable strategy because when teaching letter sounds implicitly the strategy requires that letter sounds be taught only in the context of a word.

The criteria for teaching an explicit strategy were applied to the responses of those students who indicated they would teach blending explicitly. These criteria are:

1. explain the goals of the instructional session and insure the students understand these goals,
2. demonstrate or model the performance you want the children to learn,
3. provide frequent opportunities to practice what they have learned,
4. provide feedback to the children concerning their performance, and

5. check to make sure the children are understanding and achieving the instructional objectives.

The following table summarized the number of students and corresponding percentage who mentioned the criteria in their strategies for explicitly teaching blending.

Table 3

Students Who Addressed the Criteria in Their Responses for Explicitly Teaching Blending

Criteria Components	No.(17 total)	%
1. Explain Objectives	4	23
2. Model the Process	14	82
3. Provide Practice	13	76
4. Provide Feedback	1	5
5. Assess Mastery	2	11

Students were asked to indicate when they would begin to teach blending to students. Teaching blending would have to follow teaching sounds of the alphabet and could begin as soon as enough of the consonant and vowel sounds were taught that could be used to build words. Nine of the seventeen (58%) students responses met the criteria and were acceptable. Students were also asked which letters they would teach first. Research (Anderson,et.al., 1986) indicated that the process of blending should begin with letters which have a sound that can be sustained. That included the vowel sounds and consonants like: s, m, l, n, r, and f. Once the children had obtained the concept of blending, then consonants with stops like t and d could be used. Ten students (59%) met the criteria. It is interesting that only six of the entire 29 students indicated that they had been exposed to the research literature relating to blending.

Phonic Generalizations

A phonic generalization is an explanation for a letter-sound pattern that exists within the language. For example " The letter 'C' when followed by the vowels 'i', 'e', or 'y' is sounded

with the sound of 's'." Generalizations such as this are taught in the elementary education classes using both the explicit and implicit approach. The same criteria that were applied to the teaching of letter sounds were used to evaluate the responses of the students who were taught phonic generalizations.

Twenty eight students responded to the questionnaire on teaching phonic generalizations. Of those 29 students 10 (35%) indicated they had been taught using an explicit approach. Fourteen (50%) had been taught using an implicit approach. Four (15%) could not remember having been taught any approach.

The following Table summarizes the number of students and corresponding percentage who mentioned the criteria in their strategy for explicitly teaching a phonic generalization.

Table 4

Students Addressing the Criteria in Their Responses for Explicitly Teaching Phonic Generalizations

Criteria Components	No.	%
1. Explain Objectives	1	10
2. Model the Generalization	10	100
3. Provide Practice	6	60
4. Provide Feedback	3	30
5. Assess Mastery	3	30

The following table summarizes the number of students and corresponding percentage who mentioned the criteria in their teaching strategies for implicitly teaching phonic generalizations.

Table 5.

Students Addressing the Criteria in Their Responses for Implicitly Teaching Phonic Generalizations

Criteria Components	No.	%
1. Illustrative Examples	13	92
2. Direct Students' Inquiry	4	28
3. Allow to Formulate Hypothesis	14	100
4. Clarify Generalizations	6	42
5. Provide Practice	7	50
6. Assess Mastery	0	0

Students were also asked if they had reviewed the research literature relative to the teaching of phonic generalizations. Of the 28 sampled, six indicated they had reviewed the literature.

DISCUSSION

The degree to which the results of this study can be generalized is limited, due to the small sample size and to the local nature of the data. However, the findings from this data bring to light potential concerns and issues regarding the competency of BYU Elementary Education students in planning and teaching phonics instruction.

We concluded that the students could not articulate well on paper the strategies to teach phonics to first grade children. One explanation for these results may be that students are not being taught appropriate instructional strategies by their professors. It is also possible that students are being taught these strategies, but they cannot remember the strategies from memory.

The data also shows that some of the students did not have an good understanding of the appropriate memory load and time of focus for first grade children. It also shows they did not understand the principles behind the process of blending letter sounds to form words. This lack of knowledge may also be the results of professors not attending to these issues in the classroom or from students not remembering.

The data also reveals that the students had not reviewed the literature relative to the teaching of phonics. The results of this part of the evaluation lead to another significant question, "To what extent does the Elementary Education department expect their students to be conversant with the current research literature?"

Even though graduating students may be committed to the teaching of phonics, if they cannot articulate the appropriate teaching strategies for phonics instruction, their ability to effectively plan and teach children how to master phonics is suspect.

The results of this study indicate that Elementary Education students at BYU did not demonstrate an ability to articulate in writing an appropriate knowledge of teaching the letter sounds to first grade children. Even though many of the students addressed some of the necessary components in an effective instructional strategy for teaching letter sounds, none of the students listed all of the four criteria activities established by the research that should be present in an appropriate instructional strategy.

Limitations of the Study

The following limitations and assumptions may account for different interpretations of the findings.

1. The present study did not attempt to determine the effectiveness of the instructional strategies which were listed by the students. In contrast, we wanted to find out whether or not students mentioned appropriate methods for the task of teaching children letter sounds.
2. Students were asked to complete the questionnaires without using any resource materials from previous classes. We realized that this was somewhat of a contrived expectation, based on the fact that teachers are allowed to refer and use their resource materials while teaching in the

actual classroom. Our purpose in not allowing the students to use resource materials was based on our objective to determine if students have internalized a basic understanding of the major or general methods which are appropriate to use in teaching phonics.

3. The ability of a student to articulate a particular strategy may not necessarily imply his ability to teach that strategy, however, logic and experience would tend to counter that statement.
4. The students may not have been given specific steps of a strategy to teach letter sounds. In discussion with faculty members much variance in teaching occurred as they instructed students relative to the topic. Some faculty members indicated that principles were given and the students were expected to be able to apply these principles depending upon the instructional needs they faced. While others simply indicated they did not teach specific strategies but discussed general concepts only.
5. The literature reviewed by the researchers for the purpose of determining criteria for teaching strategies was varied in approaches and no agreement on common elements of a teaching strategy could be found. From common elements found among various literature sources the criteria for evaluating the study was determined. That could have indicated potential variance in the findings of the study.
6. The results of the questionnaires may lack validity and reliability because some students may have misunderstood the questions. Some students may have been very cryptic in their responses and not accurately represented their actual knowledge.

Why has this evaluation been published if it is localized to one university? The approaches and criteria can be relevant to other teacher preparation institutions interested in insuring the competence of their preservice teachers. To further validate these conclusions, it will be necessary not only to determine students' ability to write the steps for a particular strategy, but also to evaluate their ability to implement that strategy in teaching phonics.

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